

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s): Cain	
Application No.: 09/457209	Group Art Unit: 2431
Filed: 12/08/1999	
Title: System, Device, and Method for Sending Keep-Alive Messages in a Communication Network	Examiner: Zia
Attorney Docket No.: 120-025	
Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Dear Sir:

Please enter and consider this Pre-appeal Brief Request For Review. Claims 1, 2, 4-9, 11-16, 18-22 and 24-26 are pending in this application. All of the pending claims are rejected on the grounds of nonstatutory obviousness-type double patenting.

The pending claims are rejected based on US 7,035,214 on the grounds that the pending claims would improperly extend the "right to exclude." The '214 patent describes transmitting data in a data communications network using a transmission control protocol in a manner which provides reduced acknowledgment control traffic, error recovery and congestion control. Claim 1 of the '214 patent recites determining, at the transmitter, if an acknowledgment to the keep-alive request is not received before expiry of the re-transmission time-out timer, whereupon the transmitter backs off for a predetermined period; detecting a missing data packet at the receiver; sending a negative acknowledgment from the receiver to the transmitter for the missing data packet, the receiver being unresponsive to any packets from the transmitter unless the receiver detects the missing data packet; and decreasing, at the transmitter, the length of the congestion

window in response to receipt of the negative acknowledgment. The specification states that the congestion window determines the transmission rate. It will therefore be appreciated that the '214 patent claims decreasing transmission rate in response to negative acknowledgements.

Claim 1 of this application recites measuring a reliability of a communication link to the neighbor; periodically calculating a reliability factor for communicating with a neighbor based upon the reliability of the communication link to the neighbor; varying a frequency for sending keep-alive messages to the neighbor based upon the reliability factor; and sending keep-alive messages by the node to the neighbor in accordance with those steps. In other words, the frequency of sending keep-alive messages to the neighbor is a function of reliability of communication with the neighbor. As described in the Abstract, the frequency of sending keep-alive messages to a reliable neighbor may be lower than for an unreliable neighbor. Consequently, resources used to detect a failure would be related to likelihood of failure. Furthermore, the failure of a relatively frequently failing node would be detected more quickly.

Comparing the pending claims in this application with the issued claims in the '214 patent it should be apparent that the '214 patent claims a technique based on *negative acknowledgements from the receiver* as opposed to *keep alive messages from the transmitter*. Further, the claims of the '214 patent claims a *congestion control* technique based on changing transmission rate of (non-management) data packets whereas the pending claims recite *changing the frequency of keep alive messages (management packets)* based on reliability of the receiver, resulting in *use of failure detection resources commensurate with likelihood of failure*. Both sets of claims describe communication between network nodes. However, the recited claim elements and results are fundamentally different. Appellant therefore asserts that the pending claims are patentably distinct from the claims of the '214 patent.

In the Final Office Action dated December 27, 2010 the examiner asserts that the pending claims in this application and the claims of the '214 patent "both ... claim subject matter that relates to ... transmitting data in a data communications network, using a transmission control protocol, to provide reduced and adjusted acknowledgment control traffic, and both ... [reduce] the acknowledgment traffic generated by TCP and control error recovery and congestion that does not require acknowledgements." Based on those assertions the examiner concludes that "the cited prior art does teach or suggest the subject matter broadly recited in [the pending claims]." Appellant suggests that the examiner has applied the incorrect standard, and therefore reached an incorrect conclusion as a matter of law. The test for double-patenting is not whether the claims of the prior art teach or suggest the subject matter broadly recited in the pending claims, but rather whether an examined application claim is not patentably distinct from the reference claim. See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998). The analysis employed in an obviousness-type double patenting rejection parallels the guidelines for analysis of a 35 U.S.C. 103 obviousness determination. *In re Braat*, 937 F.2d 589, 19 USPQ2d 1289 (Fed. Cir. 1991). Consequently, the factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966) are applied for establishing a background for determining obviousness are employed when making an obvious-type double patenting analysis. These factual inquiries are: (A) determine the scope and content of a patent claim relative to a claim in the application at issue; (B) determine the differences between the scope and content of the patent claim as determined in (A) and the claim in the application at issue; (C) determine the level of ordinary skill in the pertinent art; and (D) evaluate any objective indicia of nonobviousness. The conclusion of obviousness-type double patenting is made in light of these factual determinations, and any rejection should make clear: (A) the differences between the

inventions defined by the conflicting claims; and (B) the reasons why a person of ordinary skill in the art would conclude that the invention defined in the claim at issue would have been an obvious variation of the invention defined in a claim in the patent. There is no indication in the record that the Office has performed the required analysis. Furthermore, the Office has not set forth the differences between the inventions defined by the conflicting claims, and the reasons why a person of ordinary skill in the art would conclude that the invention defined in the claim at issue would have been an obvious variation of the invention defined in a claim in the patent.

Appellant asserts that even if the examiner had performed the required analysis the pending claims in this application are patentably distinct from the claims of the '214 patent. Claim 1 of the '214 patent recites:

A method of transmitting data in a data communications network, comprising the steps of: (i) establishing a connection-oriented communications link between a transmitter and a receiver through a Transmission Control Protocol (TCP) handshake, the communications link having a congestion window set to an initial length; (ii) transmitting data packets in TCP from the transmitter to the receiver; (iii) sending periodically a keep-alive request from the transmitter to the receiver, whereupon a re-transmission time-out timer is set, (iv) determining, at the transmitter, if an acknowledgment to the keep-alive request is not received before expiry of the re-transmission time-out timer, whereupon the transmitter backs off for a predetermined period; (v) detecting a missing data packet at the receiver; (vi) sending a negative acknowledgment from the receiver to the transmitter for the missing data packet, the receiver being unresponsive to any packets from the transmitter unless the receiver detects the missing data packet; (vii) decreasing, at the transmitter, the length of the congestion window in response to receipt of the negative acknowledgment; and (viii) re-transmitting the missing data packet.

Claim 1 of this application recites:

A method for sending keep-alive messages by a node to a neighbor in a communication network, the method comprising: measuring a reliability of a communication link to the neighbor; and periodically calculating a reliability factor for communicating with a neighbor based upon the reliability of the communication link to the neighbor; and

varying a frequency for sending keep-alive messages to the neighbor based upon the reliability factor.

In order to establish a *prima facie* case of obviousness the prior art references must teach or suggest all the claim limitations. (MPEP §2143). Claim 1 of the '214 patent does not suggest measuring reliability of a communication link. Further, claim 1 of the '214 patent does not suggest calculating a reliability factor for communicating with a neighbor based upon the reliability of the communication link, or varying the frequency for sending keep-alive messages to the neighbor based upon the reliability factor. Even if the cited prior art teaches or suggests the subject matter broadly recited in the pending claims, it does not suggest all of the limitations specifically recited in the claims. Appellant therefore requests that the rejections be withdrawn.

Respectfully Submitted,

May 25, 2011  
Date

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